

TABLE 2.—Monthly numbers of tornadoes in Arkansas, 1879 to 1926, with annual totals

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1879						1							1
1880				5									5
1881				1									1
1882													0
1883				2									2
1884					1		1						2
1885											1		1
1886													0
1887				1									1
1888													
1889													
1890													
1891											2		2
1892													2
1893				2									
1894										1			1
1895													0
1896										1			1
1897	2		3				1						5
1898	2												3
1899			1										1
1900													0
1901			5										5
1902													
1903													
1904													
1905													
1906													
1907													
1908											11		11
1909		3	13	9									25
1910													0
1911				2									2
1912		1		7				1					9
1913			19										19

TABLE 2.—Monthly numbers of tornadoes in Arkansas, 1879 to 1926, with annual totals—Continued

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1914				1									1
1915											2		2
1916						34							36
1917			3		4	3							10
1918				9	1								10
1919			1	3									4
1920				1									1
1921			1	6					1		2	1	11
1922	2		5										7
1923					2	1							3
1924				1	2				1				5
1925		3									1	1	5
1926		1	1	1				1			27		31
Total, 1879-1926	6	8	52	51	10	39	2	2	2	2	45	6	225
Total, 1908-1926	2	8	43	40	9	38	0	2	2	0	43	5	192

TABLE 3.—Tornadoes in Arkansas and thunderstorms in Little Rock, 1908 to 1926

	January	February	March	April	May	June	July	August	September	October	November	December
Number of tornadoes	2	8	43	40	9	38	0	2	2	0	43	5
Number of thunderstorms	26	47	89	134	123	176	179	154	93	44	41	25
Number of thunderstorms per tornado	13.0	5.9	2.1	3.4	13.7	4.6		77.0	46.5		1.0	5.0
Number of tornadoes per year	.11	.42	2.26	2.11	.47	2.00	0	.11	.11	0	2.26	.26

## THE ROCKSPRINGS, TEXAS, TORNADO, APRIL 12, 1927

By J. H. JARBOE

[Weather Bureau, San Antonio, Tex., Apr. 20, 1927]

The low-pressure area that passed over Texas from April 11 to 13 caused an unusual number of destructive storms. Reports of lives lost and property damaged ranged from Del Rio to Texarkana, across a section of Texas seldom visited by tornadoes. The storm that occurred in Edwards and Real Counties on April 12, probably surpassed any previous record for this section of Texas.

This tornado first made its appearance on the Edwards Plateau, in the north-central portion of Edwards County, where it hit and practically destroyed the town of Rock-springs, taking a toll of 72 lives and injuring 200 more. About 235 residence and business buildings were destroyed, and property damage amounted to \$1,230,000. But 12 houses were left standing and 6 of these were badly damaged.

The path of the tornado was first observed 3 miles north of Rocksprings. It moved southeastward, passing directly over the town, with a destructive diameter ranging from seven-eighths to  $1\frac{1}{8}$  miles in width, and about 8 miles long. It apparently jumped a hilly broken section of 25 miles and came to earth again in the south-central portion of Real County, passed near Leakey, where two people were killed and five injured. Here the path had narrowed to about one-fifth of a mile. Still moving southeastward, it next hit about 15 miles farther on, near Utopia, in the northeast portion of Uvalde County, where several buildings were blown down, but as far as known no one was seriously injured.

The path of this storm is about 65 miles in length. Just how many miles of this distance that the tornado was sweeping the ground will never be known. It passed over a very sparsely settled section of the State, most of

its course being over rock hills with little vegetation. Houses are many miles apart and roads are few.

On April 19, an attempt was made to follow and map the path of the tornado from an airplane. In some ways this was disappointing. The first indications of the storm were seen 3 miles north of Rocksprings, where all trees were down; the path passed directly over the town, continued southeast for 5 miles beyond, approximately 8 miles in all, and then it was lost in rock hills.

The counterclockwise whirl of the wind-tossed débris made the air view one of unusual interest from a meteorological standpoint. Numbers of trees fell to the south and southeast, others fell to the east, and a few fell to the northeast and north. A rough estimate made while circling 2,500 feet above the tornado path indicated that 70 per cent fell to the south and southeast, 20 per cent fell to the east, and 10 per cent to the northeast and north. Débris from isolated houses on the south side of the town were strewn in a wide arc that curved counterclockwise. The town site of nearly a square mile revealed grim evidence of the terrific force of the tornado. Tangled wreckage was piled around the larger buildings, while acres of ground where lighter buildings stood were swept bare.

The path of the storm was followed with difficulty where trees were small and scattered, and it was entirely lost 5 miles southeast of Rocksprings, nor could any evidence be found that it came to earth between Rocksprings and the dry canyon of the Frio River. No attempt was made to map the storm path from Leakey to Utopia, but reliable information indicates that the path was 16 miles long and 200 to 300 yards wide.

There is some doubt about the time that the storm reached Leakey and Utopia. Some reported it to be near midnight. This would give the tornado a movement of less than 15 miles per hour, which is unlikely. Another tornado hit in Uvalde County about 60 miles south of Rocksprings the same night of the disaster; is reported to have traveled south and turned west, passing over an uninhabited section. It is possible that three separate tornadoes occurred.

Rocksprings is the county seat of Edwards County, with a population of about 1,200. It is an inland town, situated 39 miles from a railroad, upon a high, rolling plateau; the elevation is 2,450 feet. The surrounding country is devoted to livestock raising, wool, and mohair production.

No town was ever nearer completely wrecked than was Rocksprings. The tornado hit at 7:50 p. m. without warning. The day had been rather warm and a thunderstorm, apparently of moderate intensity, was hanging north of the town, promising a spring shower. Just before dark a fresh wind from the southeast dropped to a dead calm. The cloud to the north was noticeably red at this time and seemed to be swinging eastward. A few moments later scattered hail 2 inches or more in diameter began to fall, increasing in size to baseballs. The hail is described as being round but covered with bumps, and the noise of this hail falling on the houses was heard a half mile away, which was the first warning many people had of the approach of a severe storm.

People in different parts of the town describe the wind as blowing from different directions. Some state that for two minutes before their houses collapsed the wind was from the northeast or north and increasing in strength. Others say that from a dead calm a west wind hit their house, lifting it from the ground. The destructive wind lasted about one and one-half minutes, but wreckage

continued to move about for around 10 minutes or more. No rain fell until after the passage of the tornado and no measurement of the amount was made, although a heavy electrical storm followed, with probably an inch of rain. Surrounding districts received 2 to 3 inches.

People 50 to 60 miles away observed a red, some say a yellowish, cloud over Rocksprings. No funnel-shaped cloud was seen from the town. Those that happened to be looking at the sky to the north just before the tornado came state that the cloud seemed to dip suddenly to the ground near the town. Hail was falling at this time and a great roar and grinding noise was heard by all. A minute and a half later but 12 buildings were standing. Numbers of buildings entirely disappeared even to the foundations, leaving no trace of lumber or contents. Many injured people were further bruised and cut by heavy hail that continued to fall after the passage of the tornado, as no shelter was available. Concrete and stone failed to withstand the terrific fury of the storm and heavily constructed buildings were left gaping ruins. The courthouse and post office partly escaped the tornado, but caught fire and burned.

Because of the unusually large diameter of the tornado to an observer viewing the debris from any one ground position it would seem that the damage was the result of a straight blow, but in reality the counterclockwise rotary motion of the tornado was definitely indicated by the fall of the buildings and chimneys. Blocks of houses in the northern portion of the town fell to the south and southeast, while across the central portion they went to the east, and in the southern part of the town houses fell toward the northeast, with one going northwest.

A cement church appeared to have been wrecked by expansion of air. The walls were cracked or broken about 12 feet above the floor and bulged outward 1 to 3 feet, although still standing.

### OBSERVING A TORNADO'S LIFE

By T. G. SHIPMAN

[Weather Bureau, Fort Smith, Ark., May 18, 1927]

The morning weather map of April 12, 1927, showed a shallow low-pressure area apparently with a western center in Arizona and an eastern one in Kansas. Pressure in Arizona was about 29.68 inches and in Kansas 29.64 inches. Northward of this depression was a moderately strong HIGH. Warm, sultry weather prevailed over the regions under the influence of the LOW, while it was much colder northward. A well-defined wind-shift line appeared over western Kansas. The evening map showed much the same weather conditions, with the depression center farther south. General weather conditions were sluggish, local conditions warm and sultry, and the tornado which occurred at Fort Smith on this date had a very slow progressive motion and only moderate intensity.

The tornado developed within one-quarter to one-half mile of the station, with the edge of the storm very near it, and was observed through its short existence by both employees on duty. Only weak instrumental effects were noted at the station, which is unusual for such close proximity to a tornado. Pressure showed a drop of 0.04 inch and a rise of 0.06 inch, about the average for a thunderstorm. The temperature drop was small, and the wind attained a maximum velocity of 24 miles an hour, with an extreme velocity of only 34 miles an hour. No wind velocity records were made within the path of the tornado, but estimates from effects would place it at about 100 miles an hour.

The sky was cloudy all day. Cloud and surface records showed several air strata with varying directions. At 7:00 a. m. five-tenths alto-stratus clouds from the west, five-tenths alto-cumulus clouds from the south, and a surface wind from the east were recorded. At 12:18 p. m. ten-tenths strato-cumulus clouds from the southwest and a surface wind from the southeast were recorded. At 4:20 p. m., just after the tornado, four-tenths alto-stratus clouds with undetermined direction, five-tenths strato-cumulus clouds from the west, one-tenth cumulo-nimbus clouds from the west, with a surface wind from the northwest were recorded. At 7:00 p. m. seven-tenths strato-cumulus from the southwest, three-tenths cumulo-nimbus from the southwest, and a surface wind from the northeast were recorded. All observations were made by the same employee and personal equations may be disregarded. Every wind direction was recorded in some air strata during the day either by cloud observation or instrumental records. Upper-air currents were southerly to westerly as far as cloud observations showed, and surface currents easterly. This territory has considerable local atmospheric stratification.<sup>1</sup> Six tornados have been recorded at Fort Smith beginning with 1879.

Tornado signs appeared at about 4:00 p. m., central time. Heavy rains were noted west of the station in Oklahoma just before 4:00 p. m. Seemingly very low-

<sup>1</sup> MONTHLY WEATHER REVIEW, December, 1926, 53:535-536.